Before the
FEDERAL COMMUNICATIONS COMMISSION
Washington, D.C. 20554

In the Matter of	)	
	)	
Review of the Commission's Rules	)	WT Docket No. 17-200
Governing the 896-901/935-940 MHz Band	)	

To: The Commission

COMMENTS OF THE AD HOC REFINERS GROUP

The Ad Hoc Refiners Group, by their counsel, submits these Comments in response to the Notice of Inquiry ("NOI") in the referenced matter.[1] The member companies include Exxon Mobil Corporation, Phillips 66 and Marathon Petroleum Company, each of which is engaged in the operation of petroleum refineries, the transportation by pipeline of crude oil and refined petroleum products and the marketing of refined petroleum products within the United States, among other lines of business (collectively referred to as "the Companies").[2] Each of the Companies operates private land mobile radio systems operating on frequencies derived from the 896-901/935-940 MHz band (referred to as "the 900 MHz band") in support of the day-to-day operation and maintenance of processes and systems, facility security, and emergency preparedness and response activities at several of their largest domestic refineries.

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[1] *Review of the Commission's Rules Governing the 896-901/935-940 MHz Band*, Notice of Inquiry, 32 FCC Rcd 6421 (2017). The date for filing Comments was extended to October 2, 2017, as many interested parties were focused on the recovery and restoration of systems and facilities in the aftermath of Hurricane Harvey and Hurricane Irma. *Review of the Commission's Rules Governing the 896-901/935-940 MHz Band*, Order, WT Docket No. 17-200, FCC 17-868 (rel. September 8, 2017).

[2] The term "Companies" may also include affiliates of member companies.

Summary

The 900 MHz band is the "private land mobile band-of-last-resort." The Companies operate very large land 900 MHz band narrowband mobile radio systems to meet their essential wireless voice communications requirements at major refineries. The utility of the 900 MHz band frequencies in meeting these requirements should not be undermined or diminished. There is no viable "replacement spectrum" for these systems. Reasonable adjustments to the 900 MHz band configuration may be doable to accommodate both current and future narrowband voice requirements of the Companies and other critical infrastructure entities and potential broadband and narrowband IoT requirements of critical infrastructure companies. Any reconfiguration of the 900Hz band should continue to provide sufficient spectrum for narrowband voice systems consistent with the "2x2 MHz+" proposal discussed below. In the event any reconfiguration entails the substitution in assigned 900 MHz band channels, the Commission should not depart from and continue to apply its "light touch" Secondary Markets policies.[3]

Comments

A. 900 MHz Band Private Land Mobile Systems Provide Essential Wireless Communications at the Companies' Largest Refineries

The 900 MHz band is the "private land mobile band-of-last-resort" for large mobile radio systems (500 mobile/portable units to 5000+ mobile/portable units) utilized by the Companies at their refineries.[4] The same is true for other critical infrastructure firms, principally electric utilities. Sufficient

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[3] *See generally*, *Promoting Efficient Use of Spectrum Through Elimination of Barriers to Development of Secondary Markets*, Second Report and Order and Second Further Notice of Proposed Rulemaking, 19 FCC Rcd 17503 (2004) (streamlining policies for wireless license assignments and transfers of control to reduce transaction costs, encourage more efficient use spectrum and facilitate the movement of spectrum toward newer and higher valued uses) ("*Secondary Markets*").

[4] The number of mobile/portable units authorized under the Companies' 900 MHz band licenses at the Companies' refineries in the Houston, Texas area underscore extensive use of these internal mobile networks: WNIZ 658 (6500

spectrum is not available at 800 MHz and at lower frequency bands to accommodate the requirements of large private land mobile radio systems in several major urban areas and other parts of the country; the 900 MHz band is the only option. This is particularly the case in the Houston, Southern California and New York City metropolitan areas. In these and other areas of the country, the Companies have secured additional 900 MHz band frequencies through short space agreements, spectrum exchanges and spectrum acquisitions consistent with the *Secondary Markets* rules.

The 900 MHz band frequencies and current land mobile technology supports the operation of trunked and conventional systems, mobile-talk around capabilities and the establishment of multiple talk groups. These mobile wireless capabilities are integrated into the operation of the Companies' refineries, several of which may extend well over 100 acres and include skilled employees and contractors whose duties and responsibilities are supported by and dependent upon reliable mobile communications. Each Company defines the degree to which its radio systems are hardened and supported with back-up power supplies so that the desired levels of system availability are maintained.

Apart from ongoing operations and maintenance activities, these 900 MHz band systems are a critical component of each refinery's ongoing safety and emergency preparedness and response activities, including those mandated by the Process Safety Management standard established by the Occupational Health and Safety Administration,[5] the Risk Management Plan provisions of Section 112(r) of the Clean Air Act which require facility operators to manage facility processes and systems to prevent the release of toxic and flammable substances into the environment and to establish a systematic response plan in the event of an accidental release,[6] and the oil spill prevention and preparedness plans mandated by the Clean Water Act.[7] The environmental emergency preparedness and response regulation impose primary

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units/36 channel pairs), WQQQ235 (4943 units/25 channel pairs) and WPDK 390 (2700 units/27 channel pairs). The Companies operate 900 MHz systems at other refineries located in other areas of the country including several in Southern Louisiana.

[5] 29 C.F.R. §1910.119.

[6] 42 U.S.C. §7412 (r), 40 C.F.R. Part 68.

[7] 33 U.S.C. §1251 et seq., 40 C.F.R. §§112.20 and 112.21.

emergency response obligations on the facility operators to mitigate impacts of accidental releases to the environment and surrounding communities, including the training of facility personnel in emergency response activities, and require facility operators to coordinate with local emergency responders in advance of and during emergency response activities.

To date, commercial wireless providers decline to offer service level agreements for their services, either generally, for specific customers or for customer's facilities during emergency response activities or in the aftermath of a natural disaster or major industrial incident or process upset. This is not intended as a criticism of commercial wireless services providers or a call for wireless carrier regulation, but a simple restatement of the realities under which operators of critical facilities must conduct their businesses. Reliable private land mobile communications systems are essential. For the Companies, their private 900 MHz band systems are the only realistic option for meeting these requirements at several of their major refineries.[8]

B. Providing Sufficient Spectrum for the Expansion of Critical Land Mobile Communications Systems is a Priority Consideration in Evaluating a Possible Reconfiguration of the 900 MHz Band

The Companies believe that a guiding principle in addressing the issues raised in the NOI is that sufficient 900 MHz spectrum be available for expansion of existing systems such as those operated by the Companies. This NOI raises the issue of whether spectrum bands other than the 900 MHz band are suitable for Business Industrial Land Transportation (B/ILT) narrowband voice systems.[9] The answer is a resounding "No;" other frequency bands do not provide viable options. As noted above, the 900 MHz band is the "private land mobile band-of-last-resort" for large mobile radio systems operated by critical infrastructure firms such as the Companies. In Houston and in other areas, the Companies had no other option than the 900 MHz band because there was not sufficient spectrum in other bands, including the

[8] At other large facilities, the Companies operate comparably-sized 800 MHz private land mobile systems for which the Commission has established minimum co-channel mileage separations as those applicable to 900 MHz band systems.

[9] *NOI*, at para. 22.

800 MHz band. The mobile communications requirements supported by these very large systems cannot reasonably be accommodated on other frequency bands subject to Part 90 of the Commission's rules for which the Companies are eligible for assignment.

The relative ease with which B/ILT systems may be re-purposed for commercial use, as noted in the NOI,[10] is irrelevant to the Companies. From their perspective, the question is not whether SMR operators should have access to B/ILT 900 MHz assignments,[11] but whether critical infrastructure and other B/ILT licensees should have access to the interleaved, narrowband SMR frequency assignments for system expansion. This flexibility is especially warranted as a substantial portion of the 900 MHz band spectrum is currently licensed to Pdv Wireless, Inc. ("PDV").[12] Sufficient spectrum for future expansion of these existing 900 MHz systems is a major concern for the Companies.

The framework for addressing the myriad questions raised in the Notice is tied to potential reconfigurations of the 900 MHz band. The existing 900 MHz band configuration reasonably supports the Companies' requirements. Other configurations do not. A 5x5 MHz broadband allocation for a commercial broadband service is a non-starter. Existing narrowband operations could not reasonably be accommodated. Dynamic spectrum allocation practices are novel, at best. Operational control of existing systems and the ability to determine the levels of reliability and service availability for the Companies' 900 MHz systems would be compromised, if not lost altogether. A mandated technology transition would entail the wholesale replacement of existing systems, entail hundreds of millions of dollars in equipment, engineering and operational downtime costs, [13] and pose unnecessary and unwarranted risks and

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[10] *Id.*, at para. 22.
[11] *Id.*, at para. 22.
[12] *See* Reply Comments of EWA/PDV, Realignment of the 896-901/935-940 MHz Band to Create a Private Enterprise Broadband Allocation, RM 11738, p.14 and Schedule II (charts depicting 900 MHz band spectrum held by Pdv in the Top 25 markets) ("EWA/PDV Reply Comments").
[13] Such an outcome is contrary to both the letter and the spirit of the recently issued Executive Order 13771, Reducing Regulation and Controlling Regulatory Costs, January 30, 2017, *available at* https://www.whitehouse.gov/the-press-office/2017/01/30/presidential-executive-order-reducing-regulation-and-controlling. ("In addition to the management of the direct expenditure of taxpayer dollars through the budgeting process, it is essential to manage the costs associated with the governmental imposition of private expenditures required to comply with Federal regulations").

disruption to the operations supported by the very large 900 MHz systems deployed by the Companies. The shared use of common spectrum by area-wide broadband systems and site-based narrowband systems is not practical. Expansion of existing narrowband systems would be problematic, at best.

The 5x5 MHz allocation is flawed from another perspective. The four major wireless carriers that have substantial financial, existing spectrum and engineering resources and are supported by a robust technology ecosystem are far more likely to develop an integrated broadband and push-to-talk technology that can support existing narrowband 900 MHz band voice requirements. As best as the Companies can determine, such a proven technology, let alone a service offering based on that technology, is not available. With these spectrum, technology and financial strengths, one or several of these providers are more likely to deploy such a technology as compared to potential 900 MHz band service providers.

The suggestion in the NOI that the AWS proceeding provides a template for a path forward should be reassessed.[14] In that proceeding, the Commission adopted procedures to relocate fixed microwave systems operating on 2.1 GHz frequencies to higher frequency bands such as the 6 GHz or 11 GHz bands to accommodate AWS operations.[15] As discussed above, there is no replacement spectrum for many of the narrowband 900 MHz systems currently operated by the Companies or other critical infrastructure firms.

In view of the foregoing, the Companies strongly endorse the option that the 900 MHz band B/ILT "continue to be reserved for site-based B/ILT private internal communications to ensure that spectrum is available to B/ILT entities' private internal communication needs."[16] Viable technology, service and spectrum alternatives are not on the horizon. As currently configured, the band meets critical

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[14] *NOI*, n. 65, *citing Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems*, Second Report and Order, 17 FCC Rcd 23193 (2002).
[15] *Amendment of Part 2 of the Commission's Rules to Allocate Spectrum Below 3 GHz for Mobile and Fixed Services to Support the Introduction of New Advanced Wireless Services, including Third Generation Wireless Systems*, Ninth Report and Order, 21 FCC Rcd 4473 (2006).
[16] *NOI*, at para.41.

land mobile communications requirements presently and for the foreseeable future. By any measure, the benefits of retaining sufficient spectrum resources for these critical land mobile communications requirements far outweigh the costs of significant reconfigurations of the 900 MHz band.

C. Alternative Spectrum Configurations May Merit Consideration So Long as Reasonable Spectrum Utilization Policies are Adopted

In view of the foregoing and reservations over spectrum policy decisions based on open-ended proposals such as "build to suit" broadband systems, the Companies acknowledge that "broadband" and possibly "narrowband IoT" systems operating on 900 MHz band spectrum could support fixed wireless data communications requirements associated with the operation of pipelines and the management and control of natural gas and petroleum exploration and production activities. Thus, an accommodation of the substantial, existing narrowband voice communications requirements with potential narrowband IoT or broadband applications could be explored.

A potential 900 MHz band reconfiguration could be based upon a "2 x 2+MHz" exclusive allocation for site-based, narrowband B/ILT systems available to end-users for their internal communications requirements. The public interest warrants that a substantial portion of the 900 MHz band remain available for future expansion of and for new private 900 MHz site-based systems as such expansion is reasonably foreseeable. This approach is more than warranted as the 900 MHz band is "*the*" option for new or expanded large private land mobile radio systems.

Under a potential "2 x 2+MHz" configuration, the "+ MHz" may vary by region or area. It could be based on 20% of currently assigned narrowband spectrum in the area, such as a Major Trading Area ("MTA"). Under this band configuration, 3 x 3 MHz could be available for broadband operations in many areas of the country, subject to a possible guardband as the Commission may reasonably conclude, or accommodate multiple 1.4 MHz channel pairs to support LTE-based networks or systems, as pointed out in the *NOI*.[17]

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[17] *NOI*, at n. 61.

Several questions posed in Section III. A. of the NOI focus on minimizing speculative use of narrowband 900 MHz B/ILT frequencies by prospective commercial service providers, recognizing the importance of mechanisms to ensure prompt initiation of service.[18] This is an important consideration. The rules for construction and loading of trunked and conventional non-SMR narrowband 900 MHz systems are reasonably well-defined,[19] as are the rules for MTA-based licenses.[20] These rules were designed and intended for voice systems. The Companies and the licensees of other large critical infrastructure systems have met these requirements. The only additional regulatory safeguard is the automatic discontinuance rule which provides that the license for a station that has not been operated for one year or more automatically cancels.[21] In the event the Commission elects to move forward with a partial reconfiguration of the 900 MHz band to accommodate broadband or narrowband IoT operations, realistic, readily observable metrics for construction or substantial service should be adopted, perhaps based on operational mobile or fixed endpoint devices, not merely signal coverage from a base or master site transmitter. Three to five years from the date a broadband or IoT authorization is issued should be a reasonable time for this substantial service showing.

D. The Commission's *Secondary Market*s Policies Should Apply to Any Substitution of Narrowband 900 MHz Channels to Accommodate Broadband or Narrowband IoT Applications

In its *Secondary Markets* proceeding, the Commission adopted rules and procedures to expedite the review and processing of applications for spectrum leases, license partitions, disaggregations and full assignments and declined to insert itself into the spectrum marketplace.[22] The market-based approach has worked well. Negotiations without Commission timelines or benchmarks are the rule as many critical infrastructure companies have acquired spectrum originally dedicated for commercial service, including

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[18] *NOI*, at para. 23.
[19] 47 C.F.R § 631 (trunked system loading and construction requirements); 47 C.F.R § 633 (conventional system loading requirements); 47 C.F.R § 629 (extended implementation provisions).
[20] 47 C.F.R § 665 (construction and implementation of MTA-based systems).
[21] 47 C.F.R § 90.157 (a).
[22] *Secondary Markets*, 19 FCC Rcd at17553-17560.

area-wide licenses in the Automated Maritime Telecommunications Service (AMTS), the 217-218 MHz Service, the UHF and 900 MHz paging bands, the 700 MHz Guardband, the VHF Maritime Mobile Service, and the Narrowband PCS band that is adjacent to the 900 MHz band.

PDV relied on the Secondary Markets policies in securing the assignment of its substantial 900 MHz spectrum from Sprint, SMR licensees and B/ILT licensees.[23] Two of the Companies have acquired 900 MHz channels in the secondary market, one of which acquired 900 MHz channels from Sprint prior to Sprint's major spectrum transaction with PDV and has engaged in frequency swaps with PDV. Considering the success and efficiency with which the secondary market for 900 MHz channels operates, there is no apparent reason for the Commission to do anything but follow its *Secondary Markets* policies.

The Companies and, it is reasonably believed, virtually all other critical infrastructure 900 MHz licensees, have little interest in reprising the 800 MHz rebanding process or any close approximation thereof. That exercise was time-consuming, cumbersome, and designed to accommodate two major spectrum migrations involving hundreds if not thousands of 800 MHz systems, transitioning B/ILT users to alternative spectrum so that public safety licensees could be transitioned to 800 MHz frequencies spectrally distant from SMR licensees. The process remains unfinished. The extent of any potential spectrum transactions in the 900 MHz band is far more limited. Accordingly, the *Secondary Markets* policies should continue to apply to any reconfiguration of the 900 MHz band.

[23] EWA/PDV Reply Comments, at 14.

Conclusions

Accordingly, the Companies request that any changes or modifications to the Commission's existing rules and policies or any further action in this proceeding be made consistent with the views expressed herein.

Respectfully submitted,

AD HOC REFINERS GROUP

By: /s/

C. Douglas Jarrett
Keller and Heckman LLP
1001 G Street, NW., Suite 500 West
Washington DC 20001
202.434-4180
Its Attorneys

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